42- 079-00014

COMMONWEALTH OF PENNSYLVANIA
Department of Environmental Protection
September 15, 2009
717-787-9483

SUBJECT: Source Test Review
UGI Development Company
Hunlock Creek Power Station
Coal-Fired Boiler No. 6, Source ID 031
Hunlock Township, Luzerne County
Title V Permit No. 40-00005
eFacts ID No. 1822027

TO: Mark Wejkszner, with attachments
Air Quality Program Manager
Northeast Regional Office

FROM: Darren T. Lauer, Air Quality Specialist D.T.L
Source Testing Section
Division of Source Testing and Monitoring

THROUGH: Gregory D. Parrish, Chief
Division of Source Testing and Monitoring

Richard J. Begley, Chief
Source Testing Section
Division of Source Testing and Monitoring

UGI Development Company operates a Foster Wheeler drum type boiler, identified as Boiler No. 6, at its Hunlock Creek Facility. The boiler has a rated heat input capacity of 636.5 MMBtu/hr and is used to produce steam to power a 50 megawatt (MW) electric generator. The boiler is capable of firing anthracite and bituminous coals, petroleum coke, no. 2 fuel oil, or synthetic fuel. Emissions from the boiler are controlled by two Research Cottrell, Inc. electrostatic precipitators, designated as ESP unit 1 & ESP unit 2, before the effluent is discharged to the atmosphere through a circular exhaust stack.

On June 22 of 2009, Catalyst Air Management, Inc. (Catalyst) performed testing for Boiler No. 6 to determine total particulate matter (filterable (FPM) and condensable (CPM)) emissions. This test program was conducted for compliance purposes in accordance with the Department's EGU initiative and the Title V operating permit. During testing, EPA Methods 1, 2, 3A, 4, 5, and Other Test Method 28 (OTM 28) were used. Pulverized bituminous coal was fired during testing. Lbs/MMBtu mass emission rates were determined using EPA Method 19 fuel specific emissions factors and stack O_2 concentration. The reported heat input (HI) results

shown in the table below were determined by UGI using their Fc Factor value and the reported stack flow rate (kscfm) and CO_2 data from the certified CEMS data acquisition system (DAS).

While reviewing the test report, the following item was noticed:

An incorrect Fd Factor of 9,186 dscf/MMBtu was reported as a result of using % ash instead of % O_2 data in the M19 Fd Factor calculations. The test contractor sent data sheets (attached) using the corrected Fd Factor of 10,000 dscf/MMBtu to determine the lb/MMBtu results shown in the table below.

The reported test results are acceptable to the Department as representative of the emissions under the operating conditions during testing and may be used for compliance determinations.

The following is a summary of data presented in the test report:

Process Data:

Test Dates:	**6/22/09**	**6/22/09**	**6/22/09**	
Run Number	**1**	**2**	**3**	**Avg.**
Steam Production (lbs/hr) [1]	364,581	363,611	364,204	364,132
Gross Electricity Generated (MW)	40.4	40.3	40.5	40.4 [1]
Heat Input (MMBtu/hr)	503.5	461.9	464.3	476.6 [1]
Permit Rated Heat Input (MMBtu/hr)	636.5			
% of Permit Rated Heat Input [1]	79.1	72.6	72.9	74.9

FPM, CPM, & Total PM Test Results:

Test Dates:	6/22/09	6/22/09	6/22/09	
Run Number	1	2	3	Avg.
Fd (dscf/MMBtu)	10,000			
Oxygen (%, dry-basis)	8.0	8.1	8.0	8.0
Volumetric Flow Rate (dscfm)	136,828	130,553	133,959	133,780
FPM Emission Concentration (gr/dscf)	0.042	0.040	0.034	0.039
FPM Mass Emission Rate (lbs/hr)	48.74	45.15	39.08	44.32
FPM Mass Emission Rate (lbs/MMBtu)	0.096	0.094	0.079	0.090
FPM Permit Mass Emission Rate (lbs/MMBtu)	0.1			
CPM Organic Emission Concentration (gr/dscf) [2]	4.30 E-04	4.40 E-04	7.60 E-04	5.40 E-04
CPM Organic Mass Emission Rate (lbs/hr) [2]	0.505	0.496	0.873	0.625
CPM Organic Mass Emission Rate (lbs/MMBtu) [2]	9.98 E-04	1.04 E-03	1.76 E-03	1.27 E-03
CPM Inorganic Emission Concentration (gr/dscf) [2]	3.59 E-03	3.70 E-03	4.01 E-03	3.76 E-03
CPM Inorganic Mass Emission Rate (lbs/hr) [2]	4.21	4.13	4.60	4.31
CPM Inorganic Mass Emission Rate (lbs/MMBtu) [2]	8.31 E-03	8.62 E-03	9.27 E-03	8.73 E-03
Total CPM Mass emission Rate (gr/dscf)	4.02 E-03	4.14 E-03	4.77 E-03	4.31 E-03
Total CPM Mass emission Rate (lbs/hr)	4.71	4.63	5.47	4.94
Total CPM Mass emission Rate (lbs/MMBtu)	9.30 E-03	9.66 E-03	11.0 E-03	10.0 E-03
Total PM Emission Concentration (gr/dscf)	0.046	0.044	0.039	0.043
Total PM Mass Emission Rate (lbs/hr)	53.42	49.74	44.52	49.23
Total PM Mass Emission Rate (lbs/MMBtu)	0.106	0.104	0.090	0.100

[1] reviewer calculated data and/or averages based on the reported data

[2] reviewer corrected results to proportion the allowed field blank subtractions for each CPM faction according to its portion of the total field blank mass. Total CPM and Total PM results have been reduced by the CPM faction field blank mass subtractions accordingly.

Cc: Stack Test File (RED) – UGI Development Company, Hunlock Creek Power Station, Hunlock Township, Luzerne County, with attachments
Norman Frederick, Northeast Regional Office, w/o attachments
AIMS/AKB, w/o attachments
EPA/AKB, w/o attachments
Reading File, Source Testing Section, w/o attachments
2009 EGU Test Initiative, w/o attachments

Ec: V. Trivedi, New Source Review Section, Division of Permits
Dan Husted, Air Toxics and Risk Assessment Section, Division of Permits
Gregg Parrish, Division of Source Testing and Monitoring
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